



UNIVERSITÀ DI PAVIA
Department of Electrical,
Computer and Biomedical
Engineering

PHD SCHOOL IN MICROELECTRONICS

Industrial Topics in Microelectronics and Photonics - Seminars



Serial Interface Architecture Evolution from “simple” USB at 500Mbps to the state-of-the-art 112Gbps

March 21st, 4PM (UTC+1), Magenta Seminar Room (D Floor)

[Zoom Link for remote connection](#)

Department of Electrical, Computer and Biomedical Engineering

Abstract: *The constant growth of digitally intensive services, such as Internet of Things (IoT), multimedia on demand, cloud storage, and cloud computing, is driving the continuous upgrade of telecommunication infrastructures and data centers to support an exponential network traffic increase, intra chips communication must sustain the dramatic communication speed*

Starting from the early 2000 the trend is to replace parallel communications with serial data. A new communication field has been introduced: the serializer-deserialize (SerDes)

The speech describes SerDes architecture evolution starting from “simple” USB at 500Mbps to the state-of-the-art 112Gbps. Evolution of Clock-Recovery techniques and architectures from Non-Return-to-Zero (NRZ) to Pulse Amplitude Modulation 4-level (PAM4) are illustrated.



Speaker: A. A. Rossi was born in Pavia, Italy, in 1967. He received the Laurea degree in electronics engineering from the University of Pavia, Pavia, in 1993. In 1994, he joined STMicroelectronics, Castelletto Site, Milan, Italy. From 1995 to 2005, he was a System Architect with the Data Storage Division. He has been involved in many projects for hard-disk drives based on PRML detection. From 2000 to 2001, he was a Visiting Scholar with CMRR, University of California, San Diego, CA, USA. Since 2006, he has been a System Architect with the High-Speed Interface IPs Team, STMicroelectronics. From 2006 to 2011, he was located in Grenoble, France, and he was involved in the consumer IPs (SATA PCI-Ex). Since 2011, he has been with the Studio di Microelettronica, Pavia, where he has been involved in networking leading edge SerDes.

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